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## RCRA INSPECTION REPORTIVE

### MAPCO Alaska Petroleum Inc.

1100 H. & H. Lane North Pole, AK 99705

5/10-14/93

FACULITY ADDRESS:

MAPCO Alaska Petroleum Inc.

1100 H. &. H. Lane North Pole, AK 99705

SITE .

ADDRESS:

MAPCO Alaska Petroleum Inc.

1100 H. &. H. Lane North Pole, AK 99705

RCRA Identification number: AKD000850701

INSPECTION

COMMENCED:

5-10-93 @ 1400 hours. The inspection closed out 5-14-93.

SITE

CONTACTS:

Kathleen McCullom, Environmental Coordinator David Rowse, General Manager, (907) 483-2741

SPECTION

INSPECTION TEAM:

EPA team members;

Daniel Tangarone, Team Leader, Environmental Engineer

Douglas Hardesty, Environmental Engineer

Andrew Hess, EPS



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W. Douglas Smith, Senior Compliance Investigator

ADEC team members:

Jack Contts, Air program 907-451-2132

Don Gibbler, UST

Kristen DuBois-Goodwin, RCRA, (907) 451-2131 Vauessa Blevins, Civil Engineer, Drinking Weser,

(907) 451-2170

Waste water

SITE BACKGROUND:

MAPCO, North Pole, Alaska operates as a small quantity generator of hazardous waste. Periodically the facility exceeds the monthly 1000 kg limit for hazardous waste generation when a change out takes place or there is an unscheduled discharge or spill.

#### Location:

The North Pole refinery occupies 40 acres off the Old Richardson Highway near North Pole, Alaska, located in the southeast corner of Section 16, Township 2 South, Range 2. East which is leased from the State of Alaska (Lease No. 50824).

The refinery is located on the floodplain alluvium of the Tanana River, whose nearest channel is located about one-quarter mile southwest of the southwest corner of the site. In this region the river trends about North 45 degrees West. The refinery is separated from the Tanana River by the Tanana Levee, which is part of the Chena Lakes Flood Control Project

The groundwater aquifer is located 3 to 10 feet below the ground surface. The aquifer is both a sensitive environmental zone, and an area of public concern because the North Pole refinery is located up gradient of the city of North Pole and their potable water wells to

(NOTE: The property occupied by MAPCO actually consists of 240 acres leased from the State of Alaska. The ponds,

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hazardous waste storage area, bone yard and some storage areas extend considerably beyond the 40 acres described in their contingency plan.)

#### Climate:

"Located approximately at the 65th parallel, the area is surrounded by mountain ranges, and is well sheltered from maritime infinences. The area consequently has a definite subarctic, continental climate. This climate is characterized by long, cold winters with short days, and short warm summers with nearly continuous daylight. The National Weather Services maintains a data collection station at the Fairbanks International Airport. Weather records kept since 1904 exhibit an extreme range of temperatures. The minimum recorded temperature is -65° F, and the maximum is 99° F, and the mean annual air temperature is 25° F."

This description was taken from Section 2 of the facility Oil Spill Contingency Plan (1988 edition).

Products produces by MAPCO are marketed in Alaska with . emphasis on the interior of the State.

"The plant uses the basic refinery process of distillation to separate the crude oil into its various fractions. In addition, the plant employs an extraction unit to selectively separate the high octane components of the crude to produce gasoline. Unlike larger, more complex refineries, the plant does not employ the use of cracking or other conversion processes to form new compounds by changing the molecular structure of the hydrocarbons received in the crude oil. A portion of the feed stock is unused, and is returned to the Trans Alaska Pipe System (TAPS) pipeline.

The refinery process include desalting, crude atmospheric distillation, vacuum distillation, and aromatic extraction. The desalting process removes salt, water and other impurities from the crude oil before it is charged to the crude distillation towers. In the atmospheric distillation towers the crude is separated into

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gas, naphtha, distillates, gas oil, and reduced crude. The reduced crude is charged to the vacuum distillation unit to produce asphalt. The naphtha and light distillate is charged to the extraction unit to remove a high octane gasoline blend stock.

By means of blending, several finished products are produced from these process streams. Gasoline, both leaded regular and unleaded regular, military jet fuel, commercial jet fuel, No. 1 and No. 2 heating fuels, No. 1 and No. 2 diesel fuels, industrial turbine fuel, and asphalt road oil are the products marketed from the facility.

The refinery is a continuous process and is therefore in operation 24 hours per day, 365 days per year. Process unit shutdowns for inspection and repair are scheduled on three year cycles and are staggered to maintain continuous operation.

Also located on the site are two 65-MW gas turbine electric generating units owned and operated by Golden Valley Electric Association. Fuel for these units is supplied from the North Pole refinery."

The previous statement was taken from Section 3 of the Oil Spill Contingency Plan. An excellent general explanation of the Refinery Operations may be found in Section 3.2 of the same Contingency Plan.

Total aggregate storage capacity is 500,000 barrels of petroleum product in 26 storage tanks. All tanks except T-201 was constructed on gravel foundations within the containment area. Tank T-201 is mounted on reinforced concrete saddles.

Exceptions to above ground piping are the oily water collection drains which run from the containment areas to the sumps within the plant. The sumps themselves are steel and more than half buried in the soil. Pipes crossing roads are subgrade and insulated with cathodic protection. Incoming crude and out going product pipelines are installed below grade with corrosion protective wrappings and cathodic protection." The above

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information was excerpted from the 1988 Contingency Plan.

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Mr. Rowse, General Manager stated that there are no chemical reactions that occur in the plant process. He further stated that the total throughput is approximately 125,000 bbls/day, of which 35/40% is retained and produces product. He said that approximately 60% of the product is shipped out by rail and local sales are shipped by truck. He said that the process is simply identified as a solvent extraction using Sulfolane, a produce produced by Shell Oil or Phillips Petroleum.

In general all wastes generated in the production of product are placed back into the pipe line. Exceptions are heat exchanger (K050 waste) and desalter wastes produced during change outs. These materials are manifested and sent for disposal as hazardous wastes.

MAPCO is pursuing clean closure of several units and treating contaminated groundwater in response to a 3008(a) Complaint and Compliance Order and a 3008(h) Administrative Order on Consent, signed January 6, 1989.

#### OPENING CONFERENCE:

On May 10, 1993, Dan Tangarone conducted the opening conference for the inspection team. All inspection team members presented their credentials to representatives of the plant present at this meeting. The principal facility representatives were Kathleen McCullom, Environmental Coordinator and David Rowse, General Manager, (907) 488-2741. Mr. Tangarone introduced and explained the roles for each inspector. Mr. Tangarone then outlined the scope and sequence intended for the inspection. Mr. Rowse said that it would be permissible to use the video camera during the inspection and requested a copy of the tape after case review by the various program offices.

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RECORDS INSPECTION:

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Attached is the Multi-Media "Request for Documents" sent to the facility by Barbara Lither, Compliance Program Manager prior to the commencement of this inspection. All requested documents that were necessary to copy and review later are attached to this report under the title "Facility Documents".

Ms. DuBois-Goodwin and I reviewed all manifests generated since 1988. We found some waste minimization documents filed with the manifests but manifests were not consistently accompanied by a waste minimization statement. There were land disposal statements with each hazardous waste manifest.

Ms. DuBois-Goodwin and I reviewed the compliance orders and the SPCC and Oil Spill Contingency Plan (1989).

DuBois-Goodwin and I reviewed the training program and observed the computer tracking system maintained by John Taylor, Safety Officer. He reviewed the mandatory training and all subsequent training. We chose an employee at random and reviewed the records on Jeane Brodie. The records indicated: that she had completed all the training outlined by Mr. Taylor. Safety and Hazardous waste training at the facility appeared to be comprehensive and thorough good documentation.

We requested information regarding updated financial assurance for the facility. Ms. McCollum stated that she was of the opinion that financial assurance was a one time requirement.

We requested information regarding the change out of heat exchangers and the disposal of the K050 heat exchanger sludge. We were not provided any written documentation at the time of this inspection. The request was repeated at the close out on 5-13-93.

FIELD INSPECTION:

The following locations were observed during this inspection:

ARE they ever

DOIS IN these

AIR STRIPPERS

Is it okay?
Subparts AAT
Subparts AAT
101. TOC.

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- 1. Control Room
- 2. Desalters
- 3. Process Air Strippers
- 4. All pumps
- 5. Wastewater Lagoons
- Heat Exchanger storage pad
- 7. Hazardous Waste Storage Area
- Laboratory
- 9. Fire Training Pir
- 10. Bone Yard
- 11. Fuel loading area.
- 12. Fleet fueling area
- 13. Safety office
- 14. Fire response building and pumper truck garage
- 15. Shop areas
- 16. Process areas
- Administration offices
- 18. RR loading area
- 19. Tank Farm

At the time of this inspection the plant was operating under a ground water compliance order from the Alaska Department of Environmental Conservation (ADEC) and a 3008(a) and 3008(h) order from EPA. The groundwater order resulted from leaks from several bolted tanks, spills in the truck fill area, and over flow problems. A treatment system and 9 monitoring wells resulted from this order. Approximately 200,000/500,000 gallons/day are meated in stripping towers. The permitted limit for benzene was established at 5 ppb.

The 3008(a) and (h) orders resulted from problems with drum management, leaking sumps, and leaks from lagoon B and tank 192. The facility has attempted clean closure and notified FPA of their attention. There has been no response from EPA for 18 months according to Ms. McCullopp. Based on your inspection and Review of the closure plans,

Location of screens In monitoring wells: have they clean closed ?? I asked Ms. McCullom to explain the monitoring system for the

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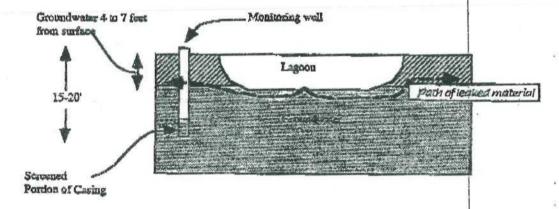
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lagoons. She said that the ground water varies between 6 and 7 feet. I obtained information from the state indicating that it may be as high as four feet several times a year. Ms. McCullom said that the monitoring wells are screened at 15 to 20 feet from the surface. She said that the monitoring wells have not indicated any leaking or contamination that exceeded the 5 ppb benzene set by the state. I asked her if there was any concern that contamination from the lagoon might float on the ground water and escape undected in the 4-7 foot zone and that her monitoring wells might not detect it because they were screened far below the surface of the ground water. See diagram of my hypothesis:

#### Theoretical petroleum contaminant leak:



Ms. Blevins and I thought that it might be possible for sludge to build up in the bottom of the lagoon. A leak in the bottom of the lagoon might have oily residues that might be heavier than water as sludge but might float if disturbed by movement. I asked Ms. McCullom if she felt satisfied that her wells would detect all leaks from the lagoons. She said that she had complete confidence.

K050 waste stored more than 90 days without proper waste management:

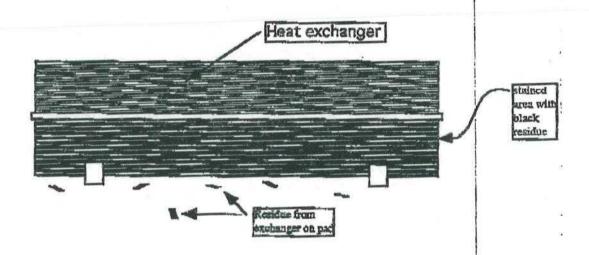
During the inspection of the yard and operations area I observed two heat exchanger bundles (See video footage 205-243 and INSPECTION REPORT: BY W. Douglas Smith,

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1909-2022) The larger of the two units was darker on its bottom half. I asked Ms. McCullom how the units were removed. She said that they were pulled and the dripping K050 waste was collected and shipped as hazardous waste. I asked her if the units had been pressure washed or cleaned. She said that she didn't know. I then looked closely at the units and determined that the bottom half of the larger unit appeared to have a residue like black soot. This material may be scorohed Sulfaline used in the heat exchangers. The residue on the bottom portion and a comparison with the rusted upper portion is clearly shown in the video tape (see video footage 1909-1022). Heat exchanger sludge is a listed K050. The residue was not believed to be an acute dermal toxin according to Ms. McCullom.



Ms. McCullom thought that the two heat exchargers on the pad were changed out in the fall or late summer of 1992. I observed at least 6 other heat exchangers of similar size on the west side of lagoon C (approximation). I asked her how long those units had been stored and she thought that they had been there about the same time. She said that they were determining costs for waste disposal, scrapping or rebuilding. She said that she would provide documentation.

Discrepancy in

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number of sumps indicated:

We reviewed the contingency plan to identify where the sumps were located. The contingency plan identified 24 units in the text but their referenced diagram indicated 27. Ms. McCullom did not know which was accurate. (See video footage 243-520) The sumps are not underground tanks and are exempted from Underground Storage Tank regulations.

The hazardous waste storage area was secured with a chain link fence with a locked gate. There were warning signs. The drum pad was impermeable concrete with a blind sump and a ramped beam. There were half a dozen containers. All were labeled and none were leaking. None of the material had been in storage more than 30 days. (See video footage 1626-1807)

Potentially faulty fire protection and safety equipment:

The RCRA inspection team walked through out the entire tank farm and process area. There were only two fire extinguishers observed that had labels indicating they had been inspected more recently than 1991. There were at least a dozen portable fire extinguishers that had expired inspection dates. The only fire extinguisher in the Tetracthyl lead room had a label indicating that it had last been inspected in May 1991. These units were both liquid and dry types. (See video tape footage 1151-1210, 1210-1233, 1326-1340, 1340-1358, 1358-1413, 1413-1428, 1428-1500, 1500-1526, 1827-1845, 1845-1902, 1902-1909) The significance of not having inspected and workable fire fighting equipment was emphasized when it was learned that the emergency nonfication system for the tank farm area consists of portable radio communication (walkie-talkie) or voice. We walked for nearly an hour without encountering anyone with a walkie-talkie and if an emergency would have bappened we would have had to walk as much a 1000 feet to get to assistance and the alarm system.

Hazardous waste in 55-gallon trash drum that was not satellite accumulation:

Near fire extinguisher #219 there was a trash drum with three

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spray paint cans in it. (See video footage 1526-1541) The small quantity of hazardous waste (i.e. toluene, thinners, etc.) in each can was minimal but other spray paint cans could be disposed of in a similar manner. It appeared probable that these trash drums would receive spent pressurized paint cans and other hazardous waste materials generated in the yard or tank farm area. There were dozens of these drums scattered around the facility. There were no designated hazardous waste satellite accumulation containers outside the laboratory area. It was not possible to estimate the potential quantity from the limited information available because the waste disposed in these 55-gallon drums is not monitored.

Laboratory area:

The laboratory was well organized with an accumulation container immediately outside the rear door. The 10 gallon container was marked and contained broken mercury thermometers. All spent solvents used in washing glassware and analytical equipment was sent either down the drain to the sanitary septic system or seturned to the pipeline. (See video footage 1244-1321)

Liquid in solid waste

container:

There was a spring lid waste can with "Oily Rags Only" written on the lid. It was partially filled with liquid. (See video footage 1808-1827) There were no rags or other waste in the container.

Liquid what - Diet Coke? Toxic waste? Used oil?

CLOSING CONFERENCE:

The close out took place in the administration building on 5-13-93. I stated that there were concerns regarding hazardous waste accumulation and storage. I gave the K050 heat exchanger waste as an example. I further stated that there might be some concern about the lack of verifiable fire protection in the yard and tank areas. I requested more information regarding the time the heat exchangers had been stored in the yard and what they planned to do with them.

Whot About used oil??

Is MARCO A processor or

ReRefirer? Receive from

offsite? Generator? Ship

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ATTACHMENTS:

A. Notices of inspection

B. Notebooks

C. Video tape & Photographs

D. Facility documents

DATE

W. Douglas Smith, Sr. Compliance Investigator

DATE

Kristen DuBois-Goodwin

# ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION NORTHERN REGIONAL OFFICE 1001 NOBLE STREET, SUITE 350 FAIRBANKS, ALASKA 99701

(907) 451-2360

FAX # 451-2187

Sent to: Geoff Krenery

From: Kristian

Subject: Maple

Date: 5 (e/1/93 Pages to Follow: D

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Solid & Hazardous Waste Management Section